Use the Box Tool

Introduction

EnSight provides a hexahedron shaped specification tool called the “Box” tool. When visible, the Box tool appears as a (typically white) wireframe box icon with a triad at one corner. The Box tool is used to supply EnSight with a 3D volume specification, for example to specify the location for a box clip or cut.

Basic Operation

In many cases, the Box tool will automatically turn on when performing some function that requires it. You can also turn the tool on and off manually by toggling Tools > Box. The Box tool can be placed in two ways: interactively through direct manipulation of tool “hotpoints” with the mouse or precisely positioned by typing coordinates into a dialog.

To move the Box Tool with the mouse:

1. **Place the mouse pointer over the origin corner of the tool.**
2. **Click (and hold) the left mouse button.**
3. **Drag the Box to the desired location.**
4. **Release the mouse button.**

To stretch the Box Tool with the mouse:

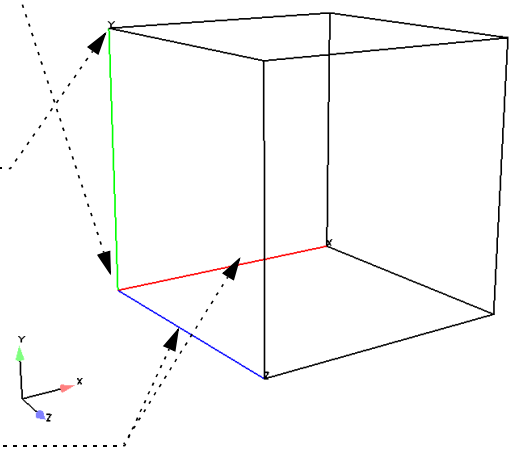
1. **Place the mouse pointer over any of the corner points (except the origin).**
2. **Click (and hold) the left mouse button.**
3. **Drag the endpoint to produce the desired stretched size.**
4. **Release the mouse button.**

To rotate the Box Tool with the mouse:

1. **Place the mouse pointer over the center of the x, y, or z edge(not at the endpoints).**
2. **Click and drag to rotate.**

Note: Selection of the X axis edge will rotate the box about the Y axis edge. Selection of the Y axis edge will rotate about the X axis edge. Selection about the Z axis edge will rotate about the origin.

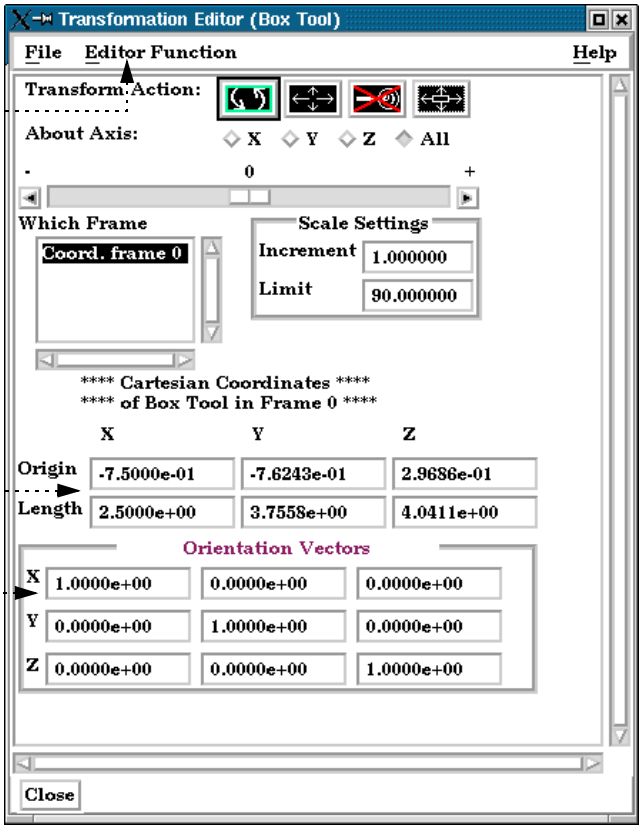
(Undo/Redo button at the bottom of screen can be used to undo/redo the tool transformation)



Box tool moving and stretching is in 3 space. (Note that the Box will not exactly track the location of the mouse pointer.)

To set the Box Tool by specifying coordinates:

1. **Open the Transformation Editor dialog by clicking Transf. Edit... on the desktop.**
2. **Select Editor Function > Tools > Box.**
3. **To place and size, enter the desired coordinates for the Origin corner and the length in each of the directions, and press return.**
4. **To orient, enter the components of the orthogonal axis orientation vectors**



You can also rotate, translate or stretch the Box Tool by selecting the desired Transform Action, setting the desired axis, and then manipulating the slider bar. For these tool actions, the values in the “Scale Settings” section control the sensitivity and limit of the slider action.

Note that you can also use this dialog to view (rather than set) the position of the Box Tool since the numeric values always update to reflect the current location, size, and orientation. If you are positioning the Box Tool interactively with the mouse, the values will update when the mouse button is released.

Advanced Usage

After a model has been loaded, the initial location of the Box Tool is centered about the “look-at” point – the geometric center of all visible geometry - and is aligned with the model axis system. The coordinates of the Cylinder are specified with respect to the default frame: frame 0. However, if you have created additional **frames**, you can position the Box Tool relative to the origin of a different frame. This is accomplished by selecting the desired frame in the “Which Frame” list in the Transformation Editor dialog.

You can easily reset the position and orientation of the Box tool to the default. See **How To Reset Tools and Viewports** for more information.

Positioning a 3D tool with a 2D device (the mouse) can be difficult. Multiple **viewports** are sometimes helpful in positioning tools since you can see the tool simultaneously from multiple vantage points.

See Also

Other tools: **Cursor**, **Line**, **Plane**, **Cylinder**, **Sphere**, **Cone**, **Surface of Revolution**. See the How To article on **Frames** for additional information on how frames effect tools.

User Manual: **Tools Menu Functions**